XV-M30E

SERVICE MANUAL

AEP Model
UK Model
E Model
Australian Model

SPECIFICATIONS

Picture size	3-inch picture measured diagonally
Effective picture size	46 x 62 mm (h/w)
Display	TN LCD/TFT active matrix method
Picture element	92,160 (240 x 384)
Audio output	100 mW
Speaker	28 mm dia.
Light source	Internal light (built-in fluorescent lamps)
Input jack	Audio/video input jack (A/V IN)
Output jack	Earphone jack
External power input	DC IN jack (6 V)
Power requirement	6 V DC, see "Power sources"
Power consumption	Approx. 3 W (DC)
Operating temperature	5°C to 40°C
Storage temperature	–20°C to 60°C
Dimensions	Approx. 99 x 84 x 38 mm (w/h/d) not including projecting parts and controls
Weight	Approx. 230 g not including batteries
Supplied accessories	AM3 (N) batteries (6), Battery case (1), Monitor stand (1), Shading hood (1), AV signal connecting cord (1)

Design and specifications are subject to change without notice.

MICROFILM

LCD COLOR MONITOR

SONY®

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SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

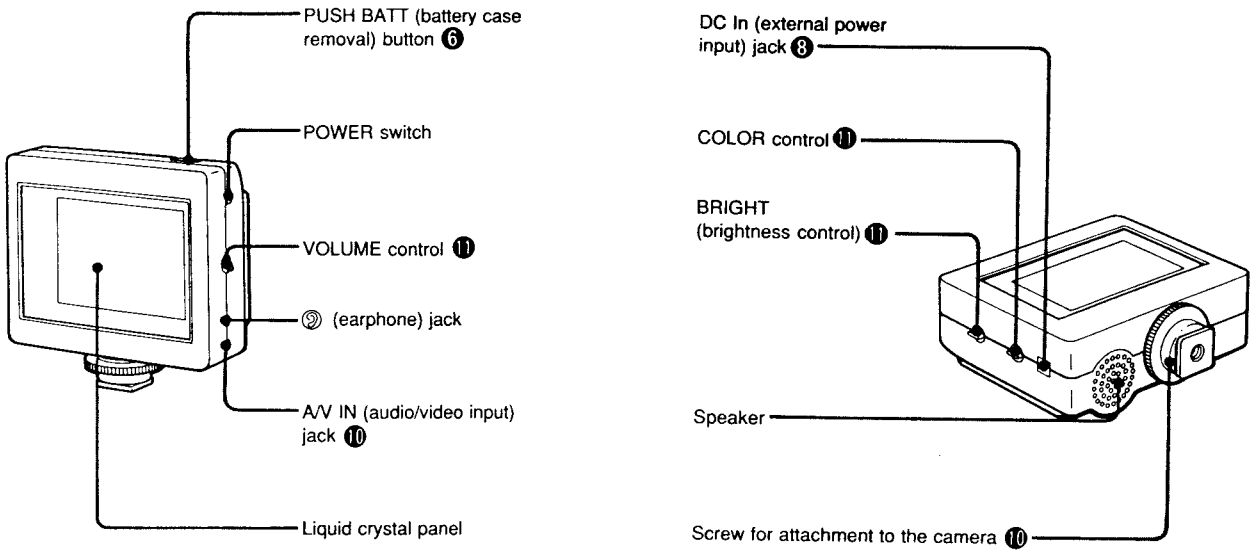
1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.

This section is extracted from instruction manual.

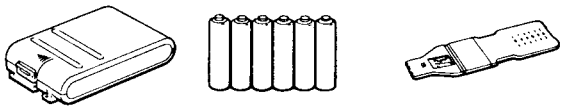
SECTION 1
GENERAL

Parts Identification

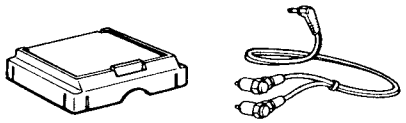
Refer to the pages indicated in ● for details.


PUSH BATT (battery case removal) button ❻
POWER switch
VOLUME control ⓫
(earphone) jack
A/V IN (audio/video input) jack ⓾
Liquid crystal panel
DC In (external power input) jack ❽
COLOR control ⓫
BRIGHT (brightness control) ⓫
Speaker
Screw for attachment to the camera ⓾

Supplied accessories



Battery case (1) — R6 (size AA) alkaline batteries (6) — Monitor stand (1)



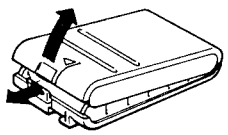
Shading hood (1) — AV signal connecting cord (1)

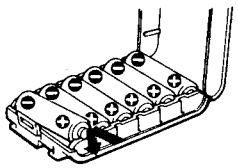
Power Sources

Using on Batteries

Install six R6 (size AA) alkaline batteries in the supplied battery case, and attach the case to the rear of the monitor.

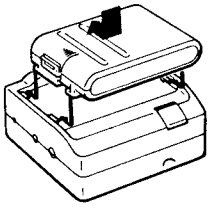
Installing batteries





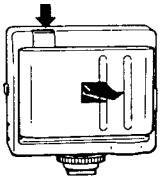
Six R6 (size AA) alkaline batteries with correct polarity

Attaching the case to the unit



To remove the case

Press.



Pull out.

Battery life

Manganese battery R6P (Sony SUM-3 (NS))	Approx. 45 minutes
Alkaline battery LR6 (Sony AM3 (N))	Approx. 160 minutes

(measured under a temperature of 25°C by using the monitor continuously with the VOLUME control set to the middle)

Using the optional battery case

The Sony EBP-77 battery case is optionally available. Twelve R6 (size AA) batteries are installed in the EBP-77.

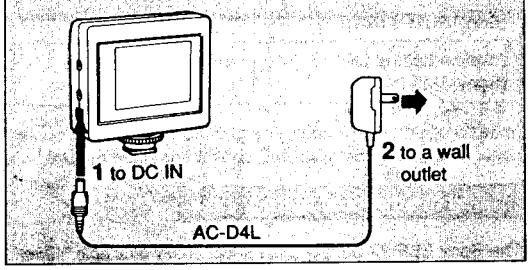
Notes on batteries

- Using the unit under an extremely low temperature or listening to at so loud a volume will shorten the battery life.
- When the batteries are exhausted, the picture becomes monochrome or invisible, or the internal fluorescent lamp does not light up. If this happens, replace all the batteries with the new ones.

Other Power Sources

Using with house current

Use the optional AC power adaptor AC-D4L.



Using with rechargeable battery

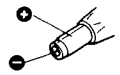
The monitor can also be used with the Sony NP-55 and NP-77 rechargeable batteries. These rechargeable batteries are optionally available as accessories for the Sony video camera recorders. Attach the rechargeable battery to the monitor in the same manner as the supplied battery case.

Battery life

NP-55 (fully charged)	Approx. 120 minutes
NP-77 (fully charged)	Approx. 240 minutes

Notes

- If an AC power adaptor not manufactured by Sony is used, a fuse must be installed and the polarity of the plug must be as illustrated.



Polarity of the Sony plug

- When the AC power adaptor is connected, the batteries are automatically disconnected.
- When the AC power adaptor is connected with the POWER switch turned on, the picture may not appear. In this case, turn the POWER switch off, and then turn it on again.
- When the unit is not used, disconnect the AC power adaptor from both the unit and the wall outlet.
- When disconnecting the AC power adaptor from the wall outlet, never pull the cord.
- During operation, do not cover the AC power adaptor with a cloth, etc. Otherwise, the casing may be transformed or the adaptor may be damaged.

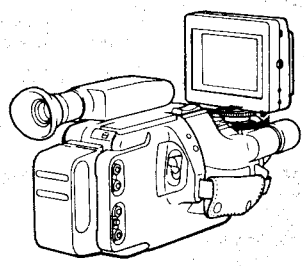
On Built-in Fluorescent Lamps

If the built-in fluorescent lamps flicker or do not light up when the power is turned on with no video signal input, replace them with new fluorescent lamps.
Consult your nearest Sony dealer.

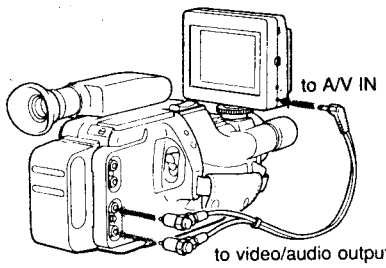
- The life of the fluorescent lamps is approximately 2 years when used 2 hours a day.

Mounting on the Video Camera Recorder

1 Fix the LCD color monitor to the accessory receptacle on the camera



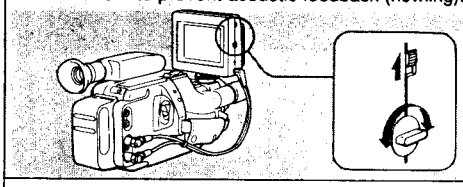
2 Connect the monitor and the camera using the AV signal connecting cord (supplied).



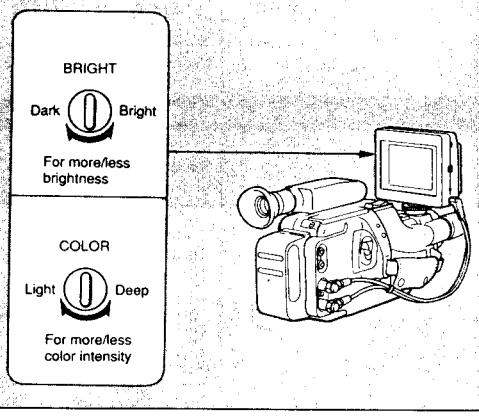
Viewing the Picture

1 Turn on the monitor and adjust the volume.

When recording with the camera, turn down the volume to the minimum to prevent acoustic feedback (howling).



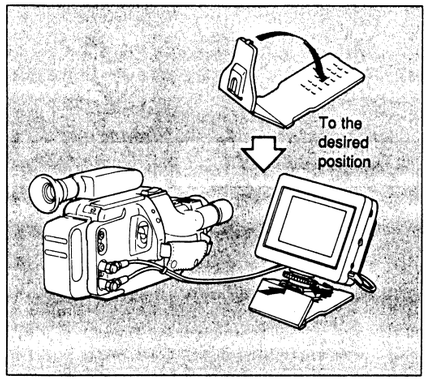
2 Adjust the picture.



Viewing the Picture

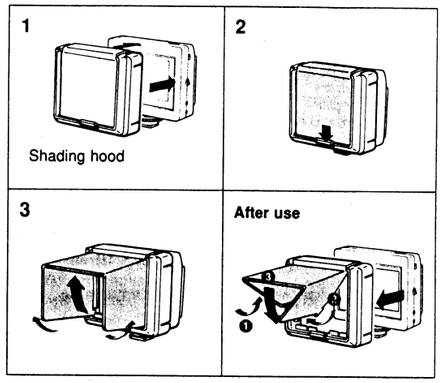
Using the Monitor on a Desk

Use the supplied monitor stand. Six different viewing angles are available.



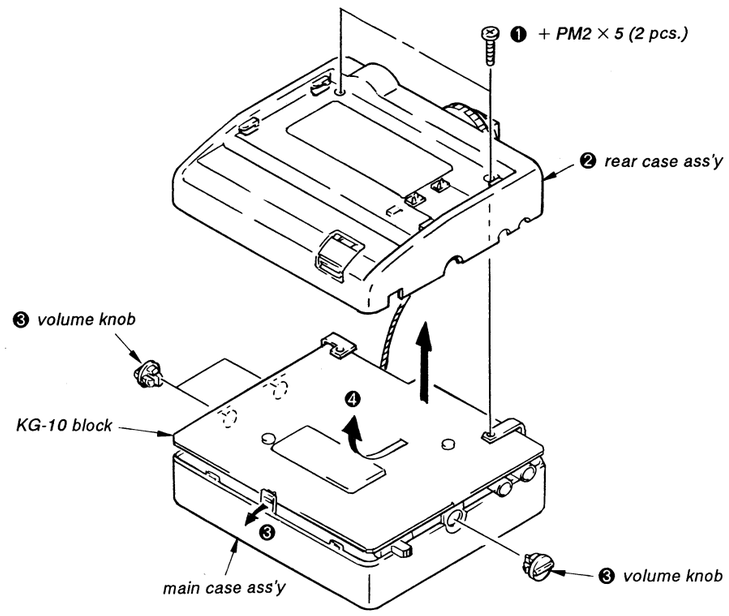
Attaching the Shading Hood

When viewing outside, use the supplied shading hood for clearer picture.

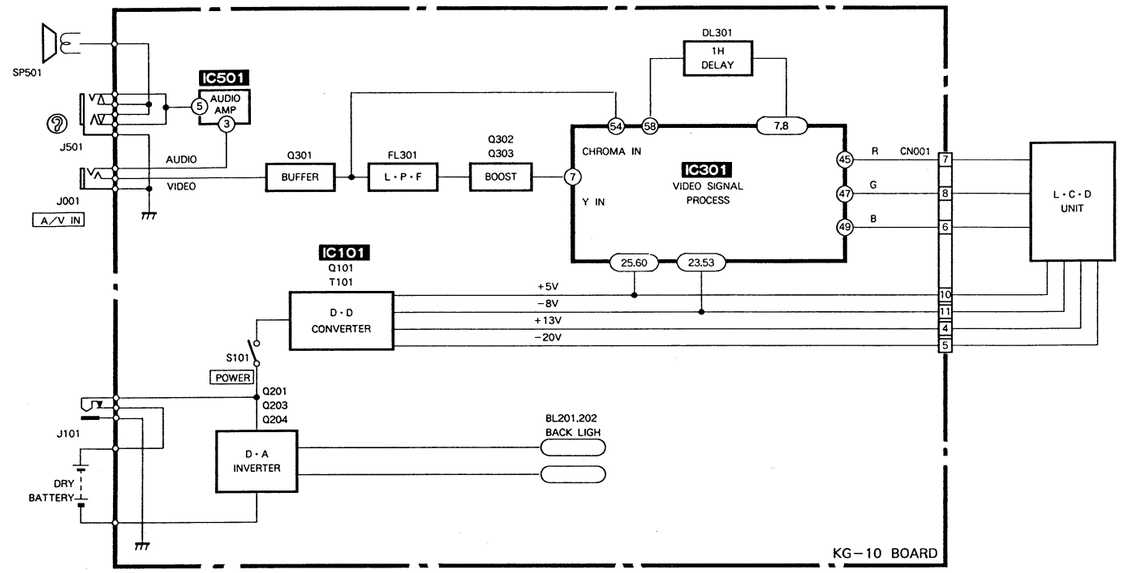


If you make the picture search or FR picture search with this monitor, the picture may be in black and white, or the picture may shake vertically.

SECTION 2
DISASSEMBLY



SECTION 3
BLOCK DIAGRAM



SECTION 4
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAM

Note:

* Indicated by the color red.

For printed wiring boards:

- ○— : indicates a lead wire mounted on the component side.
- ●— : indicates a lead wire mounted on the printed side.
- ▒▒ : Pattern from the side which enables seeing.
- Circled numbers refer to waveforms.
- ● : Through hole.
- ▒▒ : Pattern of the rear side.*

Caution:

Pattern face side: (Conductor Side) Parts on the pattern face side seen from the pattern face are indicated.

Parts face side: (Component Side) Parts on the parts face side seen from the parts face are indicated.

For schematic diagram:

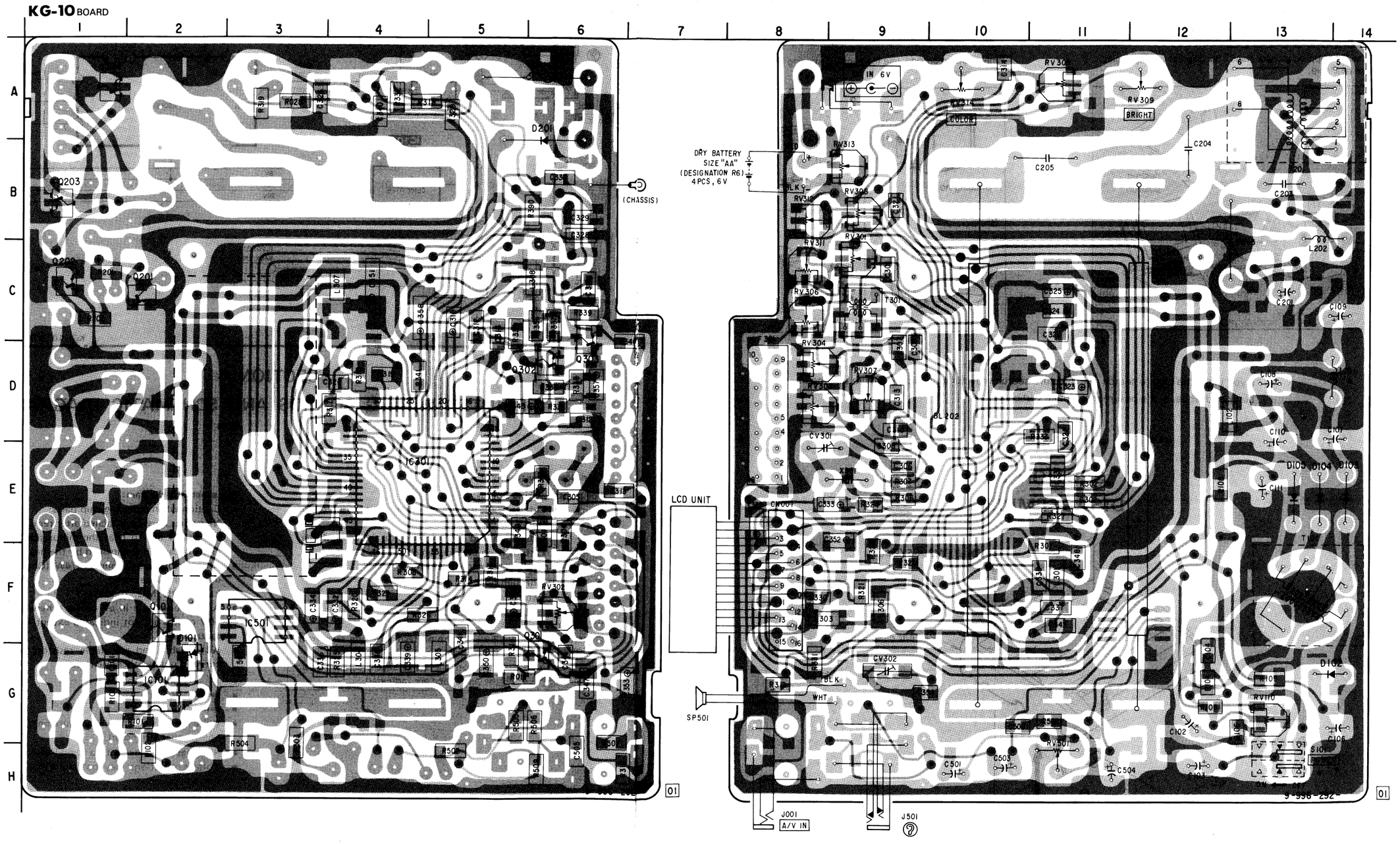
- Caution when replacing chip parts.
  New parts must be attached after removal of chip.
  Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
- All resistors are in ohms, 1/4W (Chip resistors: 1/10W) unless otherwise noted.
  kΩ: 1000Ω, MΩ: 1000kΩ.
- All capacitors are in μF unless otherwise noted. pF: μμF
  50V or less are not indicated except for electrolytics and tantalums.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ▭ : adjustment for repair.*
- ▬▬ : B+ line.*
- ▬ ▬ : B− line.*
- Voltages are dc between measurement points and ground unless otherwise noted.*
- Readings are taken with a digital multimeter (DC10MΩ).
- Voltage variations may be noted due to normal production tolerances.
- No mark : No signal/Color-bar signal input.
  ( ) : Color-bar signal input.
- Circled numbers refer to waveforms.*

When indicating parts by reference number, please include the board name.

4-1. PRINTED WIRING BOARD

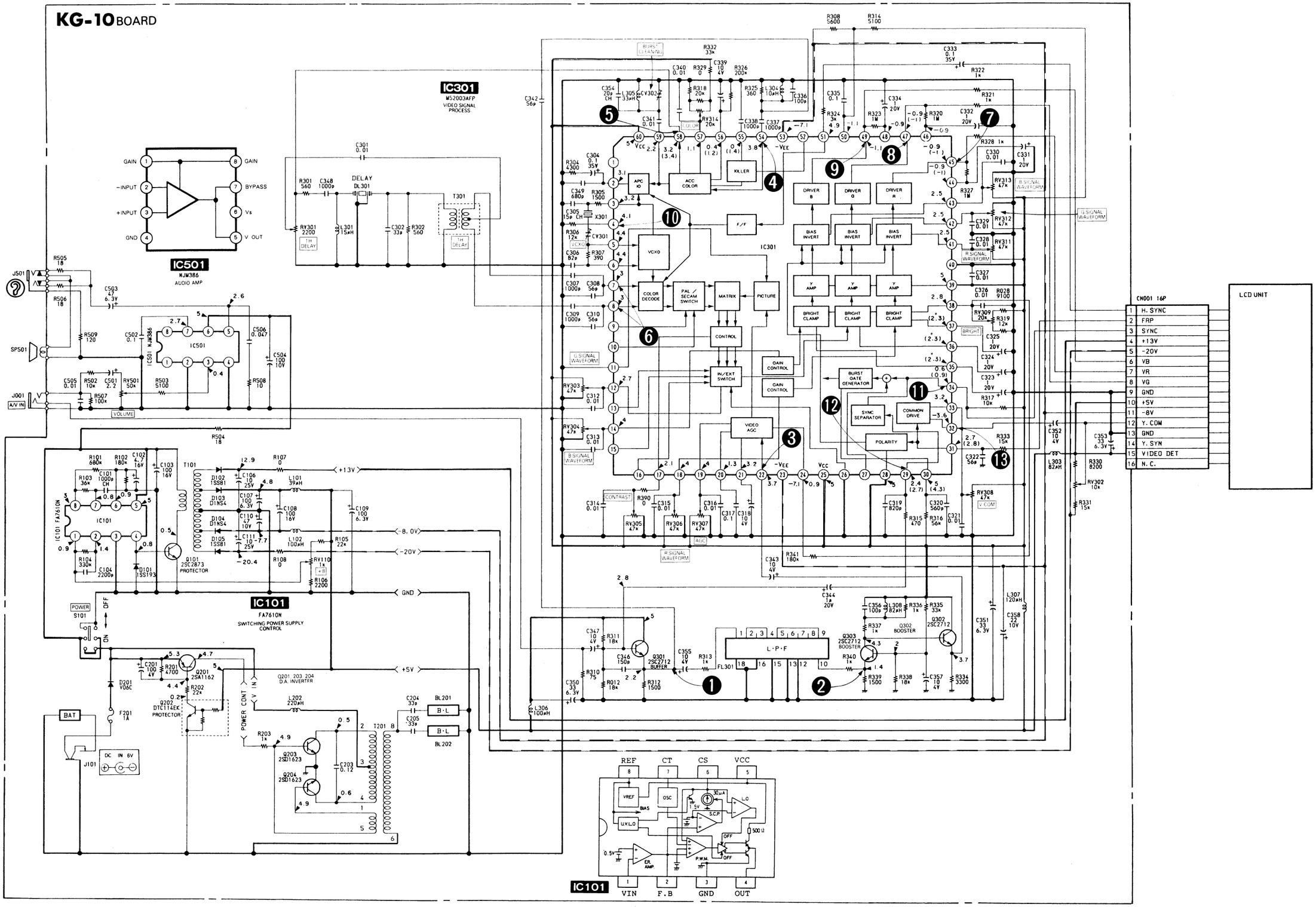
– Ref. No.: KG-10 Board; 1,000 Series –

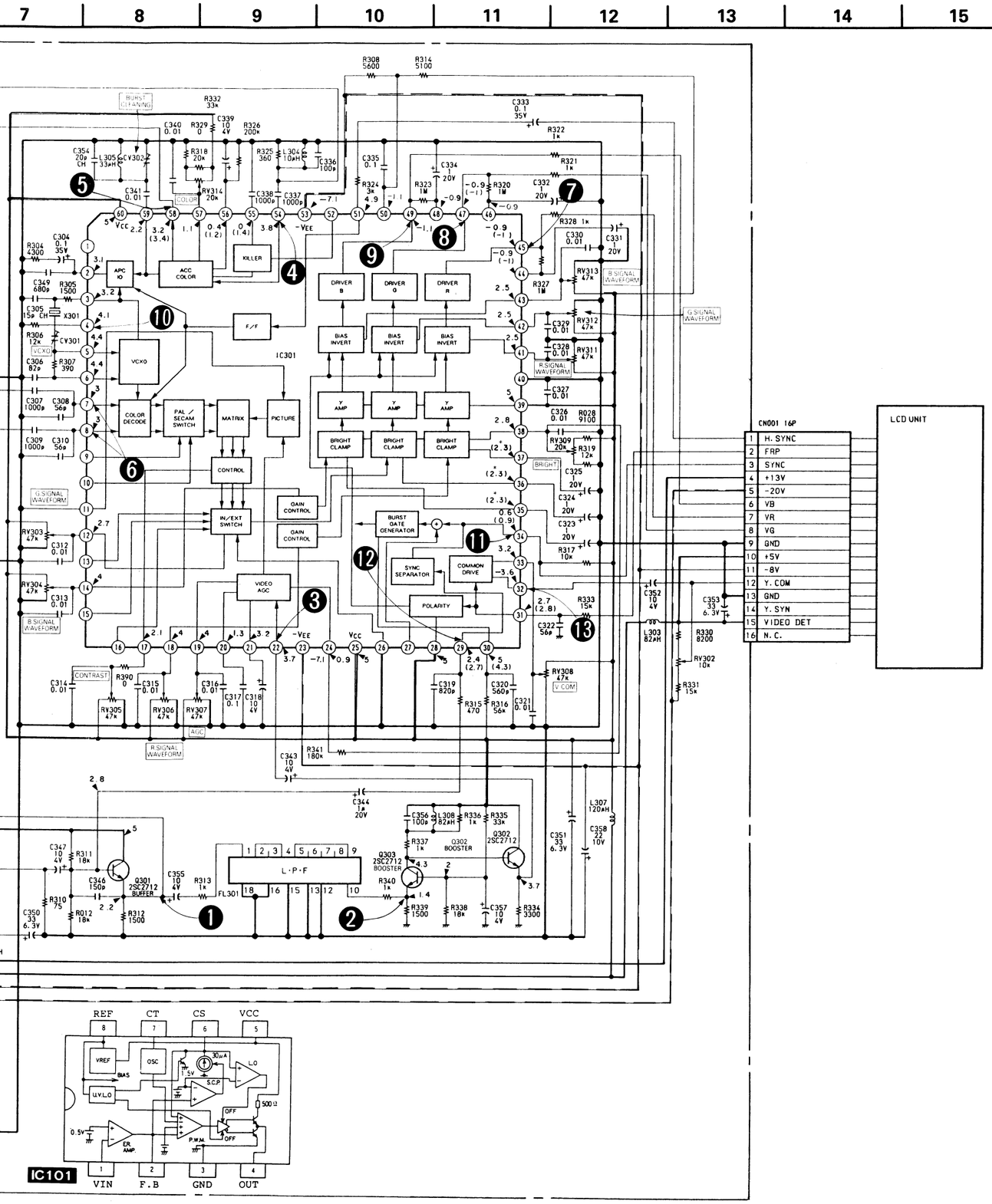
D101	G-2
D102	G-13
D103	E-14
D104	E-13
D105	E-13
D201	A-6
IC101	G-2
IC301	E-4
IC501	F-3
Q101	F-2
Q201	C-2
Q202	C-1
Q203	B-1
Q204	A-1
Q301	G-6
Q302	D-6
Q303	C-6



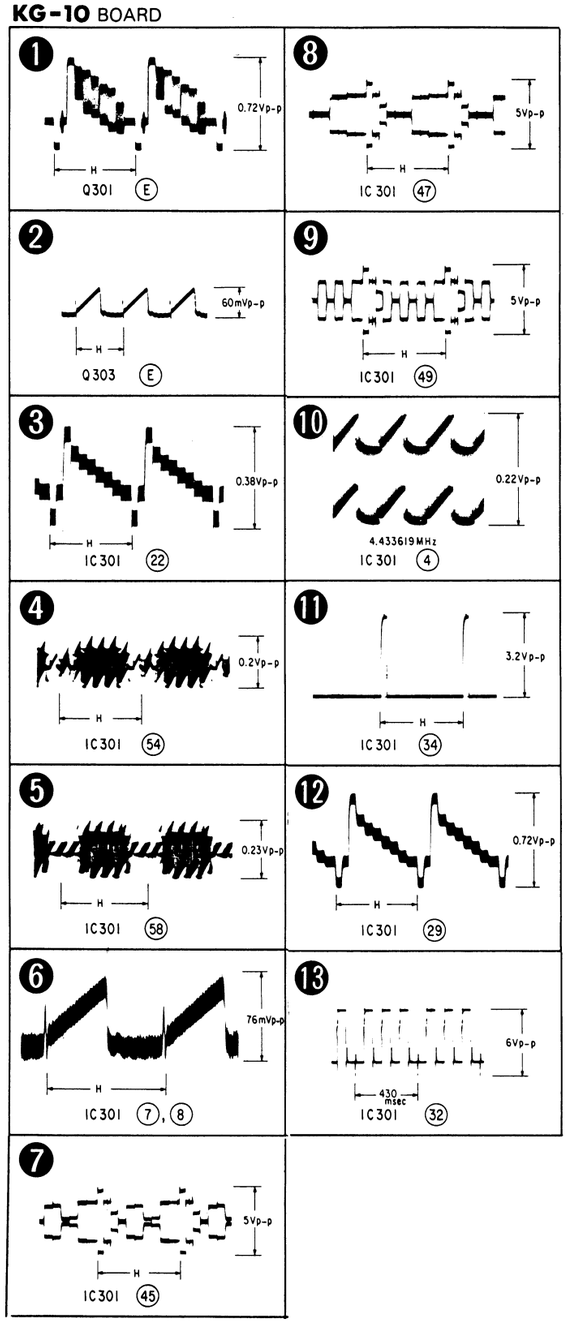
4-2. SCHEMATIC DIAGRAM

– Ref. No.: KG-10 Board; 1,000 Series –



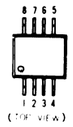


KG-10 BOARD

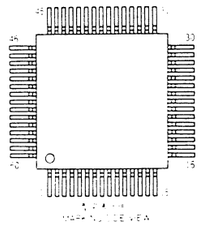


4-3. SEMICONDUCTORS

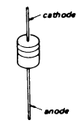
FA7610N
NJM386M



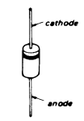
M52003FP



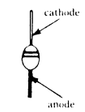
D1NS4



1SS83



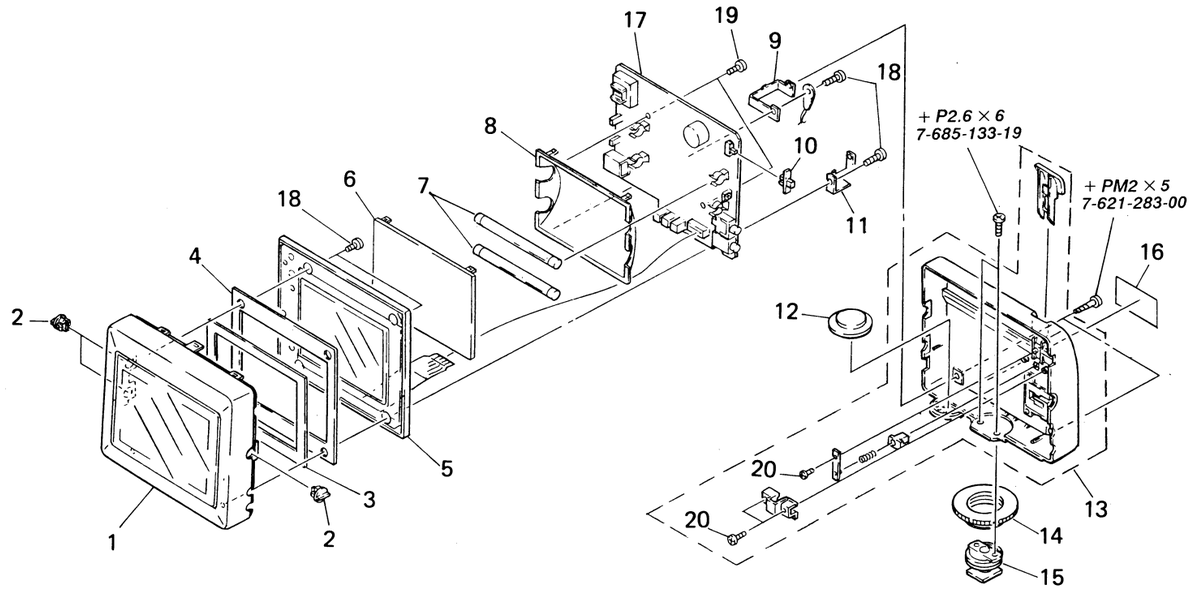
V09G



SECTION 5
EXPLODED VIEWS

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts
  Example:
  (RED) . . . KNOB, BALANCE (WHITE)
  ↑ ↑
  Cabinet's Color Parts' Color



No.	Part No.	Description	Remark
1	X-2180-703-1	CASE ASSY, MAIN	
2	2-180-729-01	KNOB, VR	
3	2-180-721-01	PACKING (2)	
4	2-180-722-01	PACKING (1)	
5	1-808-658-11	DISPLAY MODULE, LIQUID CRYSTAL	
6	2-180-734-01	ILLUMINATOR	
7	9-996-294-01	FLUORESCENT LIGHT FLE56373 (L,R) BC (BL201,202)	
8	X-2180-704-1	REFLECTOR ASSY	
9	*2-180-732-01	BRACKET (A), CASE	
10	*2-533-886-01	KNOB, SWITCH	
11	*2-180-731-01	BRACKET (B), CASE	
12	1-503-540-11	SPEAKER (SP501)	
13	X-2180-705-1	CASE ASSY, REAR	20
14	2-398-085-01	KNOB, FIXED	
15	2-532-809-00	HOLDER, SHOE	
16	*2-180-720-01	LABEL, MODEL NUMBER (AE)	
17	*1-589-227-11	KG-10 BLOCK	
18	3-318-203-01	SCREW, TAPPING B1.7X6	
19	3-892-535-01	+P1.7X3.5	
20	3-316-938-31	+P 1.4X4	

SECTION 6
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF: μF, PF: μμF.

RESISTORS
- All resistors are in ohms.
- F: nonflammable

COILS
- MMH: mH, UH: μH

SEMICONDUCTORS
In each case, U: μ, for example:
UA...: μA..., UPA...: μPA...,
UPC...: μPC, UPD...: μPD...

Ref. No.	Part No.	Description	Remark
	★1-589-227-11	KG-10 BLOCK (Ref. No. : 1,000 Series) ★★★★★★★★★★★★★★★★★★★★	
		CAPACITOR	
C101	1-163-141-00	CERAMIC CHIP 1000P 5% 50V	
C102	1-126-094-11	ELECT 4.7MF 20% 16V	
C103	1-126-101-11	ELECT 100MF 20% 16V	
C104	1-164-161-11	CERAMIC CHIP 2200P 10% 50V	
C106	1-124-247-00	ELECT 10MF 20% 25V	
C107	1-124-225-00	ELECT 100MF 20% 6.3V	
C108	1-124-455-00	ELECT 100MF 20% 16V	
C109	1-124-225-00	ELECT 100MF 20% 6.3V	
C110	1-124-589-11	ELECT 47MF 20% 10V	
C111	1-124-247-00	ELECT 10MF 20% 25V	
C201	1-124-433-00	ELECT 100MF 20% 4V	
C203	1-136-166-00	FILM 0.12MF 5% 50V	
C204	1-161-860-00	CERAMIC 33PF 5% 3KV	
C205	1-161-860-00	CERAMIC 33PF 5% 3KV	
C301	1-164-232-11	CERAMIC CHIP 0.01MF 10% 50V	
C302	1-163-105-00	CERAMIC CHIP 33P 5% 50V	
C304	1-135-070-00	TANTAL CHIP 0.1MF 10% 35V	
C305	1-163-097-00	CERAMIC CHIP 15P 5% 50V	
C306	1-163-115-00	CERAMIC CHIP 82P 5% 50V	
C307	1-163-141-00	CERAMIC CHIP 1000P 5% 50V	
C308	1-163-111-00	CERAMIC CHIP 56P 5% 50V	
C309	1-163-141-00	CERAMIC CHIP 1000P 5% 50V	
C310	1-163-111-00	CERAMIC CHIP 56P 5% 50V	
C312	1-164-232-11	CERAMIC CHIP 0.01MF 10% 50V	
C313	1-164-232-11	CERAMIC CHIP 0.01MF 10% 50V	
C314	1-164-232-11	CERAMIC CHIP 0.01MF 10% 50V	
C315	1-164-232-11	CERAMIC CHIP 0.01MF 10% 50V	
C316	1-164-232-11	CERAMIC CHIP 0.01MF 10% 50V	
C317	1-163-038-00	CERAMIC CHIP 0.1MF 10% 25V	
C318	1-135-157-21	TANTAL CHIP 10MF 10% 4V	
C319	1-163-139-00	CERAMIC CHIP 820P 5% 50V	
C320	1-163-114-00	CERAMIC CHIP 560P 10% 25V	
C321	1-164-232-11	CERAMIC CHIP 0.01MF 10% 50V	
C322	1-163-111-00	CERAMIC CHIP 56P 5% 50V	
C323	1-135-147-21	TANTAL CHIP 1MF 10% 20V	
C324	1-135-147-21	TANTAL CHIP 1MF 10% 20V	
C325	1-135-147-21	TANTAL CHIP 1MF 10% 20V	
C326	1-164-232-11	CERAMIC CHIP 0.01MF 10% 50V	
C327	1-164-232-11	CERAMIC CHIP 0.01MF 10% 50V	
C328	1-164-232-11	CERAMIC CHIP 0.01MF 10% 50V	
C329	1-164-232-11	CERAMIC CHIP 0.01MF 10% 50V	
C330	1-164-232-11	CERAMIC CHIP 0.01MF 10% 50V	
C331	1-135-147-21	TANTAL CHIP 1MF 10% 20V	
C332	1-135-147-21	TANTAL CHIP 1MF 10% 20V	
C333	1-135-070-00	TANTAL CHIP 0.1MF 10% 35V	
C334	1-135-147-21	TANTAL CHIP 1MF 10% 20V	
C335	1-163-038-00	CERAMIC CHIP 0.1MF 10% 25V	
C336	1-163-117-00	CERAMIC CHIP 100P 10% 25V	
C337	1-163-141-00	CERAMIC CHIP 1000P 5% 50V	
C338	1-163-009-11	CERAMIC CHIP 1000P 10% 50V	
C339	1-135-157-21	TANTAL CHIP 10MF 10% 4V	
C340	1-164-232-11	CERAMIC CHIP 0.01MF 10% 50V	
C341	1-164-232-11	CERAMIC CHIP 0.01MF 10% 50V	
C342	1-163-111-00	CERAMIC CHIP 56P 5% 50V	
C343	1-135-157-21	TANTAL CHIP 10MF 10% 4V	
C344	1-135-147-21	TANTAL CHIP 1MF 10% 20V	
C346	1-163-121-00	CERAMIC CHIP 150P 10% 25V	
C347	1-135-157-21	TANTAL CHIP 10MF 10% 4V	
C348	1-163-141-00	CERAMIC CHIP 1000P 5% 50V	
C349	1-163-137-00	CERAMIC CHIP 680P 5% 50V	
C350	1-135-162-21	TANTAL CHIP 33MF 10% 6.3V	
C351	1-135-162-21	TANTAL CHIP 33MF 10% 6.3V	
C352	1-135-157-21	TANTAL CHIP 10MF 10% 4V	
C353	1-135-162-21	TANTAL CHIP 33MF 10% 6.3V	
C354	1-163-100-00	CERAMIC CHIP 20P 5% 50V	
C355	1-135-157-21	TANTAL CHIP 10MF 10% 4V	
C356	1-163-117-00	CERAMIC CHIP 100P 10% 25V	
C357	1-135-157-21	TANTAL CHIP 10MF 10% 4V	
C358	1-135-161-21	TANTAL CHIP 22MF 10% 10V	
C501	1-126-161-11	ELECT 2.2MF 20% 35V	
C502	1-163-038-00	CERAMIC CHIP 0.1MF 10% 25V	
C503	1-126-154-11	ELECT 47MF 20% 6.3V	
C504	1-124-443-00	ELECT 100MF 20% 10V	
C505	1-164-232-11	CERAMIC CHIP 0.01MF 10% 50V	
C506	1-163-809-11	CERAMIC CHIP 0.047MF 10% 25V	
		CONNECTOR	
CN001	1-565-073-11	FPC CONNECTOR, 16P	
		TRIMMER	
CV301	1-141-298-11	TRIMMER 33PF	
CV302	1-141-331-41	TRIMMER CHIP	
		DELAY LINE	
DL301	1-415-649-11	ULTRA SONIC (GLASS) DELAY LINE	
		DIODE	
D101	8-719-400-18	DIODE 1SS193	
D102	8-719-901-83	DIODE 1SS83	
D103	8-719-510-02	DIODE D1NS4	
D104	8-719-510-02	DIODE D1NS4	
D105	8-719-901-83	DIODE 1SS83	
D201	8-719-900-95	DIODE V09G	
		FILTER	
FL301	1-415-524-11	L.P.F	
		IC	
IC101	8-759-979-50	IC FA7610N	
IC301	9-996-293-01	IC M52003FP	
IC501	8-759-700-50	IC NJM386M	

Ref. No.	Part No.	Description	Remark
J001	9-99		
J101	1-56		
J501	9-99		
L101	9-99		
L102	1-41		
L202	9-99		
L301	1-41		
L303	1-41		
L304	1-41		
L305	1-40		
L306	1-41		
L307	1-40		
L308	1-41		
Q101	8-72		
Q201	8-72		
Q202	8-72		
Q203	8-72		
Q204	8-72		
Q301	8-72		
Q302	8-72		
Q303	8-72		
R012	1-21		
R028	1-21		
R101	1-21		
R102	1-21		
R103	1-21		
R104	1-21		
R105	1-21		
R106	1-21		
R107	1-21		
R108	1-21		
R201	1-21		
R202	1-21		
R203	1-24		
R301	1-21		
R302	1-21		
R304	1-21		
R305	1-21		
R306	1-21		
R307	1-21		
R308	1-21		
R310	1-21		
R311	1-21		
R312	1-21		
R313	1-21		
R314	1-21		

KG-10

SECTION 6
ELECTRICAL PARTS LIST

NOTE:

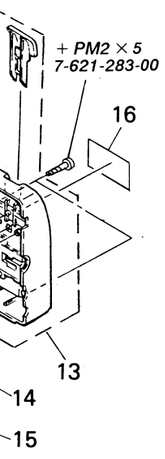
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF: μF, PF: μμF.

RESISTORS
- All resistors are in ohms.
- F: nonflammable

COILS
- MMH: mH, UH: μH

SEMICONDUCTORS
In each case, U: μ, for example:
UA...: μA..., UPA...: μPA...,
UPC...: μPC, UPD...: μPD...



Ref. No.	Part No.	Description			Remark
	★1-589-227-11	KG-10 BLOCK (Ref. No. : 1,000 Series) ★★★★★★★★★★★★★★★★★★★★			
		CAPACITOR			
C101	1-163-141-00	CERAMIC CHIP	1000P	5% 50V	
C102	1-126-094-11	ELECT	4.7MF	20% 16V	
C103	1-126-101-11	ELECT	100MF	20% 16V	
C104	1-164-161-11	CERAMIC CHIP	2200P	10% 50V	
C106	1-124-247-00	ELECT	10MF	20% 25V	
C107	1-124-225-00	ELECT	100MF	20% 6.3V	
C108	1-124-455-00	ELECT	100MF	20% 16V	
C109	1-124-225-00	ELECT	100MF	20% 6.3V	
C110	1-124-589-11	ELECT	47MF	20% 10V	
C111	1-124-247-00	ELECT	10MF	20% 25V	
C201	1-124-433-00	ELECT	100MF	20% 4V	
C203	1-136-166-00	FILM	0.12MF	5% 50V	
C204	1-161-860-00	CERAMIC	33PF	5% 3KV	
C205	1-161-860-00	CERAMIC	33PF	5% 3KV	
C301	1-164-232-11	CERAMIC CHIP	0.01MF	10% 50V	
C302	1-163-105-00	CERAMIC CHIP	33P	5% 50V	
C304	1-135-070-00	TANTAL CHIP	0.1MF	10% 35V	
C305	1-163-097-00	CERAMIC CHIP	15P	5% 50V	
C306	1-163-115-00	CERAMIC CHIP	82P	5% 50V	
C307	1-163-141-00	CERAMIC CHIP	1000P	5% 50V	
C308	1-163-111-00	CERAMIC CHIP	56P	5% 50V	
C309	1-163-141-00	CERAMIC CHIP	1000P	5% 50V	
C310	1-163-111-00	CERAMIC CHIP	56P	5% 50V	
C312	1-164-232-11	CERAMIC CHIP	0.01MF	10% 50V	
C313	1-164-232-11	CERAMIC CHIP	0.01MF	10% 50V	
C314	1-164-232-11	CERAMIC CHIP	0.01MF	10% 50V	
C315	1-164-232-11	CERAMIC CHIP	0.01MF	10% 50V	
C316	1-164-232-11	CERAMIC CHIP	0.01MF	10% 50V	
C317	1-163-038-00	CERAMIC CHIP	0.1MF	10% 25V	
C318	1-135-157-21	TANTAL CHIP	10MF	10% 4V	
C319	1-163-139-00	CERAMIC CHIP	820P	5% 50V	
C320	1-163-114-00	CERAMIC CHIP	560P	10% 25V	
C321	1-164-232-11	CERAMIC CHIP	0.01MF	10% 50V	
C322	1-163-111-00	CERAMIC CHIP	56P	5% 50V	
C323	1-135-147-21	TANTAL CHIP	1MF	10% 20V	
C324	1-135-147-21	TANTAL CHIP	1MF	10% 20V	
C325	1-135-147-21	TANTAL CHIP	1MF	10% 20V	
C326	1-164-232-11	CERAMIC CHIP	0.01MF	10% 50V	
C327	1-164-232-11	CERAMIC CHIP	0.01MF	10% 50V	
C328	1-164-232-11	CERAMIC CHIP	0.01MF	10% 50V	
C329	1-164-232-11	CERAMIC CHIP	0.01MF	10% 50V	
C330	1-164-232-11	CERAMIC CHIP	0.01MF	10% 50V	
C331	1-135-147-21	TANTAL CHIP	1MF	10% 20V	
C332	1-135-147-21	TANTAL CHIP	1MF	10% 20V	
C333	1-135-070-00	TANTAL CHIP	0.1MF	10% 35V	
C334	1-135-147-21	TANTAL CHIP	1MF	10% 20V	
C335	1-163-038-00	CERAMIC CHIP	0.1MF	10% 25V	
C336	1-163-117-00	CERAMIC CHIP	100P	10% 25V	
C337	1-163-141-00	CERAMIC CHIP	1000P	5% 50V	
C338	1-163-009-11	CERAMIC CHIP	1000P	10% 50V	

Remark

Ref. No.	Part No.	Description			Remark
C339	1-135-157-21	TANTAL CHIP	10MF	10% 4V	
C340	1-164-232-11	CERAMIC CHIP	0.01MF	10% 50V	
C341	1-164-232-11	CERAMIC CHIP	0.01MF	10% 50V	
C342	1-163-111-00	CERAMIC CHIP	56P	5% 50V	
C343	1-135-157-21	TANTAL CHIP	10MF	10% 4V	
C344	1-135-147-21	TANTAL CHIP	1MF	10% 20V	
C346	1-163-121-00	CERAMIC CHIP	150P	10% 25V	
C347	1-135-157-21	TANTAL CHIP	10MF	10% 4V	
C348	1-163-141-00	CERAMIC CHIP	1000P	5% 50V	
C349	1-163-137-00	CERAMIC CHIP	680P	5% 50V	
C350	1-135-162-21	TANTAL CHIP	33MF	10% 6.3V	
C351	1-135-162-21	TANTAL CHIP	33MF	10% 6.3V	
C352	1-135-157-21	TANTAL CHIP	10MF	10% 4V	
C353	1-135-162-21	TANTAL CHIP	33MF	10% 6.3V	
C354	1-163-100-00	CERAMIC CHIP	20P	5% 50V	
C355	1-135-157-21	TANTAL CHIP	10MF	10% 4V	
C356	1-163-117-00	CERAMIC CHIP	100P	10% 25V	
C357	1-135-157-21	TANTAL CHIP	10MF	10% 4V	
C358	1-135-161-21	TANTAL CHIP	22MF	10% 10V	
C501	1-126-161-11	ELECT	2.2MF	20% 35V	
C502	1-163-038-00	CERAMIC CHIP	0.1MF	10% 25V	
C503	1-126-154-11	ELECT	47MF	20% 6.3V	
C504	1-124-443-00	ELECT	100MF	20% 10V	
C505	1-164-232-11	CERAMIC CHIP	0.01MF	10% 50V	
C506	1-163-809-11	CERAMIC CHIP	0.047MF	10% 25V	
		CONNECTOR			
CN001	1-565-073-11	FPC CONNECTOR, 16P			
		TRIMMER			
CV301	1-141-298-11	TRIMMER 33PF			
CV302	1-141-331-41	TRIMMER CHIP			
		DELAY LINE			
DL301	1-415-649-11	ULTRA SONIC (GLASS) DELAY LINE			
		DIODE			
D101	8-719-400-18	DIODE 1SS193			
D102	8-719-901-83	DIODE 1SS83			
D103	8-719-510-02	DIODE D1NS4			
D104	8-719-510-02	DIODE D1NS4			
D105	8-719-901-83	DIODE 1SS83			
D201	8-719-900-95	DIODE V09G			
		FILTER			
FL301	1-415-524-11	L.P.F			
		IC			
IC101	8-759-979-50	IC FA7610N			
IC301	9-996-293-01	IC M52003FP			
IC501	8-759-700-50	IC NJM386M			

Ref. No.	Part No.	Description			Remark
		JACK			
J001	9-996-289-01	MINI JACK (A/V IN)			
J101	1-562-961-11	DC JACK (DC IN 6V)			
J501	9-996-290-01	MINI JACK (EARPHONE)			
		COIL			
L101	9-996-286-01	CHOKE COIL 39UH			
L102	1-410-393-11	LEADLESS INDUCTOR 100UH			
L202	9-996-285-01	CHOKE COIL 220UH			
L301	1-410-206-51	INDUCTOR 15UH			
L303	1-410-392-11	LEADLESS INDUCTOR 82UH			
L304	1-410-204-31	INDUCTOR 10UH			
L305	1-408-783-00	LEADLESS INDUCTOR 33UH			
L306	1-410-393-11	LEADLESS INDUCTOR 100UH			
L307	1-408-790-00	LEADLESS INDUCTOR 120UH			
L308	1-410-215-31	INDUCTOR 82UH			
		TRANSISTOR			
Q101	8-729-807-50	TRANSISTOR 2SD1623			
Q201	8-729-216-22	TRANSISTOR 2SA1162			
Q202	8-729-900-53	TRANSISTOR DTC114EK			
Q203	8-729-807-50	TRANSISTOR 2SD1623			
Q204	8-729-807-50	TRANSISTOR 2SD1623			
Q301	8-729-271-23	TRANSISTOR 2SC2712			
Q302	8-729-271-23	TRANSISTOR 2SC2712			
Q303	8-729-271-23	TRANSISTOR 2SC2712			
		RESISTOR			
R012	1-216-079-00	METAL GLAZE	18K	5% 1/10W	
R028	1-216-072-00	METAL GLAZE	9.1K	5% 1/10W	
R101	1-216-117-00	METAL GLAZE	680K	5% 1/10W	
R102	1-216-103-00	METAL GLAZE	180K	5% 1/10W	
R103	1-216-086-00	METAL GLAZE	36K	5% 1/10W	
R104	1-216-109-00	METAL GLAZE	330K	5% 1/10W	
R105	1-216-081-00	METAL GLAZE	22K	5% 1/10W	
R106	1-216-057-00	METAL GLAZE	2.2K	5% 1/10W	
R107	1-216-295-00	METAL GLAZE	0	5% 1/10W	
R108	1-216-296-00	METAL GLAZE	0	5% 1/8W	
R201	1-216-065-00	METAL GLAZE	4.7K	5% 1/10W	
R202	1-216-081-00	METAL GLAZE	22K	5% 1/10W	
R203	1-247-713-11	CARBON	1.0K	5% 1/4W	
R301	1-216-043-00	METAL GLAZE	560	5% 1/10W	
R302	1-216-043-00	METAL GLAZE	560	5% 1/10W	
R304	1-216-064-00	METAL GLAZE	4.3K	5% 1/10W	
R305	1-216-053-00	METAL GLAZE	1.5K	5% 1/10W	
R306	1-216-075-00	METAL GLAZE	12K	5% 1/10W	
R307	1-216-039-00	METAL GLAZE	390	5% 1/10W	
R308	1-216-067-00	METAL GLAZE	5.6K	5% 1/10W	
R310	1-216-022-00	METAL GLAZE	75	5% 1/10W	
R311	1-216-079-00	METAL GLAZE	18K	5% 1/10W	
R312	1-216-053-00	METAL GLAZE	1.5K	5% 1/10W	
R313	1-216-049-00	METAL GLAZE	1.0K	5% 1/10W	
R314	1-216-066-00	METAL GLAZE	5.1K	5% 1/10W	

Ref. No.	Part No.	Description			Remark
R315	1-216-041-00	METAL GLAZE	470	5% 1/10W	
R316	1-216-096-00	METAL GLAZE	56K	5% 1/10W	
R317	1-216-073-00	METAL GLAZE	10K	5% 1/10W	
R318	1-216-080-00	METAL GLAZE	20K	5% 1/10W	
R319	1-216-075-00	METAL GLAZE	12K	5% 1/10W	
R320	1-216-121-00	METAL GLAZE	1M	5% 1/10W	
R321	1-216-049-00	METAL GLAZE	1.0K	5% 1/10W	
R322	1-216-049-00	METAL GLAZE	1.0K	5% 1/10W	
R323	1-216-121-00	METAL GLAZE	1M	5% 1/10W	
R324	1-216-060-00	METAL GLAZE	3.0K	5% 1/10W	
R325	1-216-038-00	METAL GLAZE	360	5% 1/10W	
R326	1-216-104-00	METAL GLAZE	200K	5% 1/10W	
R327	1-216-121-00	METAL GLAZE	1M	5% 1/10W	
R328	1-216-049-00	METAL GLAZE	1.0K	5% 1/10W	
R329	1-216-295-00	METAL GLAZE	0	5% 1/10W	
R330	1-216-071-00	METAL GLAZE	8.2K	5% 1/10W	
R331	1-216-226-00	METAL GLAZE	15K	5% 1/8W	
R332	1-216-085-00	METAL GLAZE	33K	5% 1/10W	
R333	1-216-077-00	METAL GLAZE	15K	5% 1/10W	
R334	1-216-061-00	METAL GLAZE	3.3K	5% 1/10W	
R335	1-216-085-00	METAL GLAZE	33K	5% 1/10W	
R336	1-216-049-00	METAL GLAZE	1.0K	5% 1/10W	
R337	1-216-049-00	METAL GLAZE	1.0K	5% 1/10W	
R338	1-216-079-00	METAL GLAZE	18K	5% 1/10W	
R339	1-216-053-00	METAL GLAZE	1.5K	5% 1/10W	
R340	1-216-049-00	METAL GLAZE	1.0K	5% 1/10W	
R341	1-216-103-00	METAL GLAZE	180K	5% 1/10W	
R390	1-216-296-00	METAL GLAZE	0	5% 1/8W	
R502	1-216-073-00	METAL GLAZE	10K	5% 1/10W	
R503	1-216-066-00	METAL GLAZE	5.1K	5% 1/10W	
R504	1-216-156-00	METAL GLAZE	18	5% 1/8W	
R505	1-216-007-00	METAL GLAZE	18	5% 1/10W	
R506	1-216-007-00	METAL GLAZE	18	5% 1/10W	
R507	1-216-097-00	METAL GLAZE	100K	5% 1/10W	
R508	1-216-001-00	METAL GLAZE	10	5% 1/10W	
R509	1-216-027-00	METAL GLAZE	120	5% 1/10W	
		VARIABLE RESISTOR			
RV110	1-237-141-21	RES, ADS, METAL GLAZE 1K			
RV301	1-237-142-21	RES, ADS, METAL GLAZE 2.2K			
RV302	1-237-143-11	RES, ADS, METAL GLAZE 10K			
RV303	1-237-144-11	RES, ADS, METAL GLAZE 47K			
RV304	1-237-144-11	RES, ADS, METAL GLAZE 47K			
RV305	1-237-144-11	RES, ADS, METAL GLAZE 47K			
RV306	1-237-144-11	RES, ADS, METAL GLAZE 47K			
RV307	1-237-144-11	RES, ADS, METAL GLAZE 47K			
RV308	1-237-144-11	RES, ADS, METAL GLAZE 47K			
RV309	1-238-378-11	RES, ADJ, CARBON 20K (BRIGHT)			
RV311	1-237-144-11	RES, ADS, METAL GLAZE 47K			
RV312	1-237-144-11	RES, ADS, METAL GLAZE 47K			
RV313	1-237-144-11	RES, ADS, METAL GLAZE 47K			
RV314	1-238-378-11	RES, ADJ, CARBON 20K (COLOR)			
RV501	1-237-288-11	RES, ADJ, CARBON 50K (VOLUME)			

Ref. No.	Part No.	Description	Remark
		SWITCH	
S101	1-570-114-11	SWITCH, SLIDE (POWER)	
		TRANSFORMER	
T101	9-996-288-01	DD TRANSFORMER	
T201	9-996-287-01	DA TRANSFORMER	
T301	1-459-949-11	COIL, VARIABLE	
		CRYSTAL	
X301	1-567-504-81	OSCILLATOR, CRYSTAL 4.433619MHz	
★★★

SECTION 7
ELECTRICAL ADJUSTMENTS

During the Adjustment, See the Parts Arrangement Diagram for the Adjustments on Page 20.

[Using Instruments]

1) Oscilloscope 1 or 2 phenomera, band 15MHz min, delay mode, as provided.
2) Frequency counter (min. 8 digits)
3) PAL pattern generator
4) Digital voltmeter
5) Regulated DC power supply

[Connection]

Unless otherwise specified, connect and adjust the measuring instruments as shown in the following diagram.

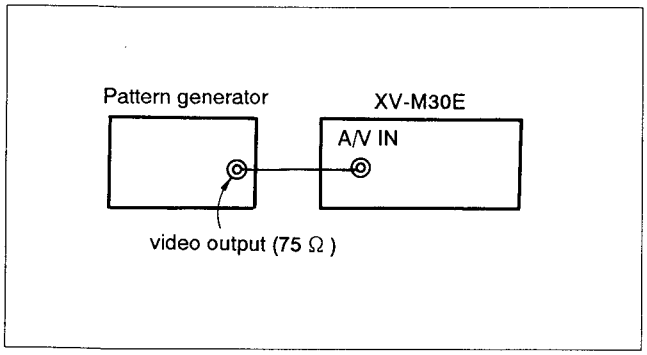


Fig. 7-1.

[Volume Setting]

BRIGHT control (RV-309) : Mechanical Center
COLOR control (RV-314) : Mechanical Center

7-1. +B ADJUSTMENT

Signal	None
Measurement point	L101 (C109 side)
Measurement equipment	Digital voltmeter
Adjustment element	RV110
Specified value	+4.75 Vdc

[Adjustment Method]

Adjust with RV110 so that the voltage on L101 (C109 side) becomes +4.75 Vdc.

7-2. AGC ADJUSTMENT

Signal	None
Measurement point	Pin ⑲ of IC301
Measurement equipment	Digital voltmeter
Adjustment element	RV307
Specified value	+3.5 Vdc

[Adjustment Method]

Adjust with RV307 so that the voltage on Pin ⑲ of IC301 becomes +3.5 Vdc.

7-3. V. COM ADJUSTMENT

Signal	Color bar
Measurement point	Pin ⑫ of CN001
Measurement equipment	Oscilloscope
Adjustment element	RV308
Specified value	6.0 Vp-p

[Adjustment Method]

Adjust with RV308 so that the waveform on Pin ⑫ of CN001 becomes 6.0 Vp-p.

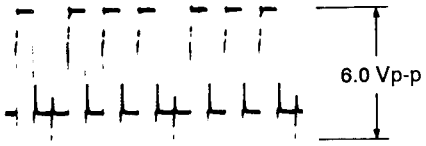


Fig. 7-2.

7-4. GREEN SIGNAL WAVEFORM ADJUSTMENT

Signal	Color bar (Chroma off/white 100%)
Measurement point	Pin ⑧ of CN001
Measurement equipment	Oscilloscope
Adjustment element	RV303, RV312
Specified value	6.5 Vp-p

[Adjustment Method]

Adjust with RV303 and RV312 so that the waveform on Pin ⑧ of CN001 becomes 6.5 Vp-p.

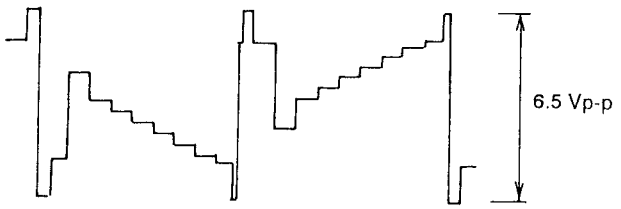


Fig. 7-3.

7-5. CONTRAST ADJUSTMENT

Signal	Color bar (Chroma off/white 100%)
Measurement point	Pin ⑧ of CN001
Measurement equipment	Oscilloscope
Adjustment element	RV305
Specified value	3.0 Vp-p

[Adjustment Method]

Adjust with RV305 so that the video signal portion of the waveform on Pin ⑧ of CN001 becomes +3.0 Vp-p.

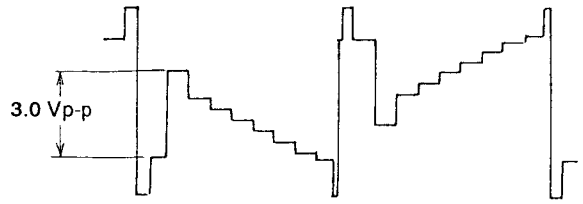


Fig. 7-4.

7-6. RED SIGNAL WAVEFORM ADJUSTMENT

Signal	Color bar (Chroma off/white 100%)
Measurement point	Pin ⑦ of CN001
Measurement equipment	Oscilloscope
Adjustment element	RV306, RV311
Specified value	6.5 Vp-p

[Adjustment Method]

Adjust with RV306 and RV311 so that the waveform on Pin ⑦ of CN001 becomes +6.5 Vp-p.

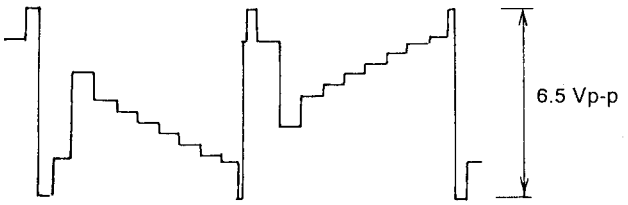


Fig. 7-5.

7-7. BLUE SIGNAL WAVEFORM ADJUSTMENT

Signal	Color bar (Chroma off/white 100%)
Measurement point	Pin ⑥ of CN001
Measurement equipment	Oscilloscope
Adjustment element	RV304, RV313
Specified value	6.5 Vp-p

[Adjustment Method]

Adjust with RV304 and RV313 so that the waveform on Pin ⑥ of CN001 becomes 6.5 Vp-p.

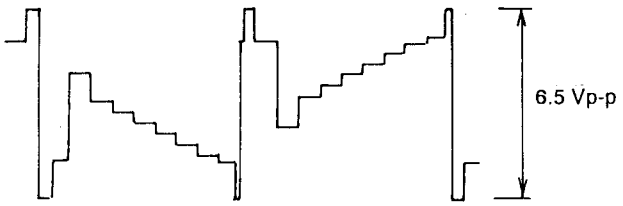


Fig. 7-6.

7-8. VCXO ADJUSTMENT

Signal	Color bar (Burst off)
Measurement point	Pin ④ of IC301
Measurement equipment	Frequency counter
Adjustment element	CV301
Specified value	4.433619 MH

[Adjustment Method]

Adjust with CV301 so that the reading on Frequency counter becomes 4.433619 MHz.

7-9. BURST CLEANING ADJUSTMENT

Signal	Color bar
Measurement point	Pin ㊽ of IC301
Measurement equipment	Oscilloscope
Adjustment element	CV302
Specified value	Minimize Chroma signal

[Adjustment Method]

Adjust with CV302 so as to minimize chroma signal.

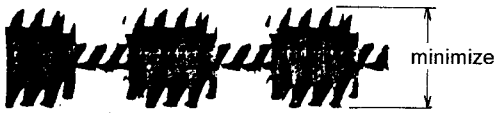


Fig. 7-7.

7-10. 1H DELAY ADJUSTMENT

Signal	Color bar
Measurement point	Pin ⑥ of CN001
Measurement equipment	Oscilloscope
Adjustment element	RV301, T301
Specified value	See Fig. 7-8.

[Adjustment Method]

Adjust with RV301 and T301 so that the waveform on Pin ⑥ of CN001 becomes as follows.

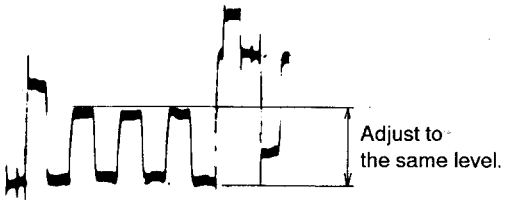


Fig. 7-8.

7-11. Parts Arrangement Diagram for Adjustments

KG-10 Board (Component Side)